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Aerospace Medical Association 72nd Annual Scientific Meeting

May 6-10 Reno, Nevada

<u>Development of Regulations for Civilian Use of</u> <u>NVGs</u>

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Naval Air Warfare Center Aircraft Division
Crew Systems Department
Lorry Faber
Federal Aviation Administration
Rotorcraft Directorate

Introduction

· Purpose

Provide an insight into the development of products that the FAA may use in formulating regulations for governing the civil use of NVGs

Briefers

Lorry: Co-chair of Special Committee 196
 Chuck: Member of SC 196 and several working groups

Historical Overview

- Increased requests from civil operators for FAA approval and certification
- Studies accomplished to determine feasibility
- Supplemental Type Certificate (STC)
 approval lengthy and expensive
- Formal FAA approval and certification will require integration among FARs that address all areas of aviation
 - Shorten process time
 - Consolidate various efforts

Current and Projected Use of NVGs

Operation	USA	Foreign	Comments
Part 91 General Aviation	Limited: Operating without FAA approval.	Limited. Operating with Transport. Canada approval.	Increased interest
Part 121 Air Carrier	None	None	Limited interest
Part 133 External Load	None	None	Increased interest
Part 135 Commercial	Limited: Operating with FAA approval.	Limited: Operating with approval.	Increased interest
Part 137 Aerial Spraying	None	None	Increased interest
Public Use Law enforcement, acrial spraying, etc.	Increased use. Not under FAA control.	None. Regulated by civil aviation authority.	Increased interest in coordinating FAA approval.

Special Committee 196

- Radio Technical Commission of America (RTCA) tasked by FAA to form a special committee
 - Joins industry, operator and regulator in the development of consensus based minimum operational standards
 - Products may be used to help formulate FAA regulations
 - Harmonization with Europe and Canada required
- RTCA approved Special Committee 196 (SC-196) in November 1999
 - Initial plenary conducted December 9-10 1999
 - SC-196 Co-Chairs appointed
 - Lorry Faber FAA
 - Jim Winkel Northrop Grumman/Litton

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Boeing		ACCREMENT OF A	1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Multiple Aircraft Lighting OEMs		ERRINAD CONTRACT	The same of the	NVG Compatible Aircraft Lighting
Multiple NVG Manufacturer's		All Andreas Commence	Company of the Company	Domestic and Foreign
Multiple Federal Agencies		327 127		Customs, Border Patrol, DOE
Multiple Flight Training Vendors				Currently providing public-use, part 91 and part 135 training
Serviceability OEM		X X		Continued Airworthiness
Head-Up Display OEM		ACADIA CARACA		Commission of workings
Existing NVG Operators		A Property of the Control of the Con	Year of Year	Public-use, Part 135, Foreign
Special Interest Groups		D. Britishen, J. Lewinsch, Sept. March School, School, School, St. Lewinsch, St. Lewinsch, St. Lewis School, School, St. Lewis School, School, St. Lewis School, School, St. Lewis School,	Land of Managers and The Common Life India-	
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SC-196 Working Groups

Working Groups	Products
WG-1 Concept of Operations	Operational concepts and requirements. Rotor wing and fixed wing. General aviation through commercial. Forms basis for other documents.
WG-2 Night Vision Goggles	Minimum operating performance standards for NVGs.
WG-3 NVIS Lighting	Minimum operating performance standards for NVIS lighting
WG-4 Continued Airworthiness	Minimum operating performance standards for continued airworthiness.
WG-5 Training	Training guidelines and other considerations.

Philosophy

- Define NVIS as integration of all components required for safe and effective use of NVGs
 - NVGs
 - NVIS lighting
 - Aircraft
 - Transparencies
 - Ergonomics
- Integrated system approach for design, installation and testing
- Use lessons learned from military
 - Civil flight profiles can be similar in complexity

MOPS Document Overview

Sections	Content
1. Introduction	Purpose, scope and rationale for requirements: Operational goals. Definitions and assumptions.
2. NVG Performance Requirements and Test Procedures	General guidance and minimum performance standards. Recommended test procedures.
3. NVIS Lighting Performance Requirements and Test Procedures	General guidance and minimum performance standards. Recommended test procedures.
4. Installed NVIS Performance and Test Procedures	Minimum performance standards and recommended test procedures for the integrated system after installation. Supplements, complements and/or validates previous testing.
5. Continued Airworthiness	Procedures needed to ensure NVIS continues to meet minimum performance standards once in operational use.

Status of RTCA Products

Product	Status
CONOPS	Published. RTCA DO-268 (www.rtca.org).
MOPS	Estimated completion date Sep 2001.
Training Documents	Estimated completion date Dec 2001.

Summary

SC-196 is tasked with producing documents that may be used by the FAA for the development of rules and regulations governing the use of NVGs in the National Airspace System. These products are nearing completion.